

REMARKS

Claims 1-8 are pending. Claims 1 and 5 are the only independent claims.

Claims 1-8 stand rejected under 35 U.S.C. § 103 over U.S. Patent 6,493,379 (Tanaka) in view of U.S. Patent 6,064,338 (Kobayakawa et al.) and further in view of U.S. Patent Publication No. 2001/0019952 (Ishida). Applicant traverses.

Independent claim 1 recites, inter alia, a first step of adaptively updating antenna weight based on minimum mean squared error (MMSE) control according to signals received by the respective antenna elements and an error signal obtained from the desired signal corrected based on the transmission channel estimation, and a second step of correcting the antenna weight obtained in the first step using a direction vector to maintain a correlation between the antenna weight and the direction vector constant.

It was conceded in the Office Action that neither Tanaka nor Kobayakawa teach the recited constraint process. In fact, rather than use the recited MMSE control, Kobayakawa uses the known DCMP algorithm. The Office Action relied upon Ishida as allegedly teaching the first step of adaptively updating antenna weight based on minimum mean squared error (MMSE) control according to signals received by the respective antenna elements and an error signal obtained from the desired signal corrected based on the transmission channel estimation, and moreover took the position that it would have been obvious to combine the teachings of Ishida with those of Tanaka and Kobayakawa to meet the features of the independent claims. Applicant disagrees.

In previous responses, Applicant has pointed out that no legally significant *reason*, as required by the Supreme Court in *KSR*, was provided in the Office Action or in

the subsequent Advisory Action as to *why* one of ordinary skill in the art would have *modified* Kobayakawa in the manner proposed in the Office Action.

The present Office Action purports to augment the previous Actions with additional “reasons” or motivations to combine. However, as will be developed below, no reasons have been even alleged that would support the proposed modification of Kobayakawa. In fact, the only reason set forth for combining the various elements of the prior art with one another are so that, when so combined, they meet all of the claim limitations. This is completely improper.

In particular, at page 2 of the Office Action, the Examiner states that

“the reason for combining the teaching of Ishida and Kobayakawa *is to implement the MMSE method of Ishida* to update antenna weight in order for the base station to correctly separate and extract information signal sent from each mobile station. With this information signal, the base station would be able to suitably direct the directivity antenna pattern to each mobile station to ensure good transmission quality as taught by [Ishida].” (Emphasis supplied).

However, it is not sufficient to state that the reason for making a modification is so that you will have made the modification.

The reason given for the combination/modification is “to implement the MMSE method of Ishida” in the combination of references. However, the reason required to support a combination of references, in which the principle of operation of one of the cited references must be changed, must be a reason *why* one of ordinary skill in the art would actually make the *modification* to the reference to be changed.

In this case, a reason would have to have been provided for changing the principle of operation of the Kobayakawa reference, which uses the DCMP algorithm, with that of the Ishida reference, which uses the MMSE method.

With regard to the phrase “to suitably direct the directivity antenna pattern to each mobile station to ensure good transmission quality as taught by [Ishida],” (Office Action at page 4), while the MMSE method is certainly capable of suitably directing the directivity antenna pattern, this fact does not constitute a *reason to make the substitution*, at least because this function is already performed, using the DCMP algorithm, by Kobayakawa.

Because the proposed combination requires a modification of Kobayakawa, the Examiner is not simply required to show why one of ordinary skill in the art would have combined Tanaka, Kobayakawa and Ishida; the Examiner must provide a reason why one of ordinary skill in the art would have combined them, and also changed the principle of operation of Kobayakawa in the process. Thus, it is not sufficient for this purpose to provide a reason as to why one might have used the MMSE method; it is required that a reason be provided for why it would have been obvious to combine the three references, and also change Kobayakawa from a system that uses the DCMP algorithm to one that uses the MMSE method.

Moreover, there is no recognition or teaching in either reference that would lead one of ordinary skill in the art to *make the change*. For at least the foregoing reasons, the combination of references is totally improper, and uses Applicant’s invention as a template through a hindsight reconstruction of Applicant’s claims. *See, e.g., Ex Parte Crawford et al.*, Appeal 20062429, Decided May 30, 2007.

In view of the foregoing, no prima facie case of obviousness has been set forth against claim 1. For at least this reason, independent claim 1 is believed clearly patentable over the cited references. Independent claim 5 recites a similar feature and is believed patentable for at least the reasons discussed above in connection with independent claim 1.

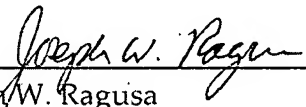
The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the above remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

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Respectfully submitted,

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